Space Weather Forecast

Issued on Monday, 01 August 2022 at 00:28 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight Chance of G1/Minor Storm intervals Day 1.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been low over the past 24 hours, with one common class flare from the eastern limb around 31/2310 UTC. There are currently two sunspots on the visible disc. AR3068 is the largest region, with a slight increase in length in the past 24 hours but no notable increase in complexity. AR3062 near the southwest limb remains small and simple. No Earth-directed CMEs were observed.

Solar Wind / Geomagnetic Activity: Solar winds indicate the recent/ongoing arrival of a high speed stream. Wind speeds have become elevated. The total interplanetary magnetic field was generally moderate. The north-south component fluctuated moderately. Geomagnetic activity was mostly Quiet (Kp 1-2) with a couple of Unsettled and Active periods (Kp 3 & 4).

Energetic Particles / Solar Radiation: The count rate of energetic particles remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low solar activity is expected to continue, with only a very slight chance of M-class flares. Flare risks are elevated from raw probabilities due to active regions rotating onto the visible disk in coming days.

Solar Wind / Geomagnetic Activity: No Earth directed CMEs are currently expected. Solar winds are elevated due to the onset of the high speed stream. Solar winds are expected to remain elevated or slightly elevated until later on day 3 or day 4 (03 or 04 Aug), when wind speeds are expected to fall back to background levels.

Initially, Unsettled or Active intervals are likely with a slight chance of G1/Minor Storms on Day 1 due to the continued onset of the HSS. Geomagnetic activity should become Quiet with a chance of isolated Unsettled or Active intervals through the period.

Energetic Particles / Solar Radiation: The count rate of energetic particles is forecast to remain at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	15	10	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	20	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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